

FORM PTO 1390  
(REV 5-93)

US DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY DOCKET NO.  
00287/46931 12/cjTRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 USC 371U.S. APPLICATION NO.  
(if known, see 37 CFR 1.5)  
NEW 09/463601International Application No.  
PCT/AT98/00155International Filing Date  
June 22, 1998Priority Date Claimed  
July 31, 1997

## Title of Invention

LEARNING SYSTEM AND METHOD OF LEARNING LEARNING CONTENTS AS WELL AS A PROGRAM LOGIC OF A  
LEARNING PROGRAM

## Applicant(s) For DO/EO/US

Heinz GÖD

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 USC 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 USC 371.
3. ☒ This is an express request to begin national examination procedures (35 USC 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 USC 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 USC 371(c)(2))
  - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ has been transmitted by the International Bureau. Form PCT/IB/308, Attachment A
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 USC 371(c)(2)). Attachment B
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 USC 371(c)(3)).
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 USC 371(c)(3)).
9. ☒ An executed oath or declaration of the inventor(s) (35 USC 371(c)(4)). Attachment C
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 USC 371(c)(5)).

## Items 11. to 16. below concern other document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment. Attachment D
   
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
   
International Search Report with cover letter, Attachment E; Small Entity Declaration, Attachment F

THE COMMISSIONER IS AUTHORIZED  
TO CHARGE ANY DEFICIENCY IN THE  
FEE FOR THIS FILING TO DEPOSIT  
ACCOUNT NO. 23-0975.

430 Rec'd PCT/PTO 28 JAN 2000

U.S. APPLICATION NO. (if known, see 37 CFR 1.5) NEW <b>09/463601</b>		INTERNATIONAL APPLICATION NO. PCT/AT98/00155		ATTORNEY DOCKET NO. 00287/46931 12/cj	
17. [X] The following fees are submitted  <b>BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):</b>  <input checked="" type="checkbox"/> Search Report has been prepared by the EPO or JPO ..... \$840.00  <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) ..... \$670.00  <input type="checkbox"/> No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) ..... \$690.00  <input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$970.00  <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-33(4) ..... \$ 96.00  <b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>				<b>CALCULATIONS</b>	<b>PTO USE ONLY</b>
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
Claims	Number Filed	Number Extra	Rate		
Total Claims	12 - 20 =	0	X \$18.00	\$	
Independent Claims	1 - 3 =	0	X \$78.00	\$	
Multiple dependent claim(s) (if applicable)			+ \$260.00	\$	
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$840.00	
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28)				-	\$420.00
<b>SUBTOTAL =</b>				\$420.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+	\$
<b>TOTAL NATIONAL FEE =</b>				\$420.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (\$40 per property).				+	\$
<b>TOTAL FEES ENCLOSED =</b>				\$420.00	
				Amount to be refunded:	\$
				charged:	\$

- a. ☒ A check in the amount of \$420.00 to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. 23-0975 in the amount of \$\_\_\_\_\_ to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 23-0975. A duplicate copy of this sheet is enclosed.

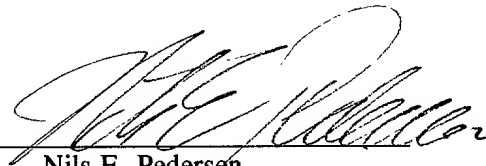
**NOTE:** Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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By



Nils E. Pedersen  
Registration No. 33,145

January 28, 2000  
NEP/tf

Check No. 36601

2000\_0081A

Applicant or Patentee: Heinz GÖD Attorneys' Docket No. \_\_\_\_\_  
Serial or Patent No.: \_\_\_\_\_  
Filed or Issued: \_\_\_\_\_  
For: Learning system and method of learning learning contents as well as a program logic of a learning program

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL  
ENTITY STATUS (37 CFR 1.9(f) and 1.27(b) - INDEPENDENT  
INVENTOR

As a below-named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled "Learning system and method of learning learning contents as well as a program logic of a learning program" described in

☒ the specification filed with  
☐ application serial No. \_\_\_\_\_, filed \_\_\_\_\_,  
☐ patent No. \_\_\_\_\_, issued \_\_\_\_\_.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 35 CFR 1.9(d) or a non-profit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

☒ no such person, concern, or organization  
☐ persons, concerns or organizations listed below\*

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

FULL NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME \_\_\_\_\_  
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I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, or any patent issuing thereon, or any patent to which this verified statement is directed.

Heinz GÖD

NAME OF INVENTOR \_\_\_\_\_ NAME OF INVENTOR \_\_\_\_\_ NAME OF INVENTOR \_\_\_\_\_

Signature of Inventor \_\_\_\_\_ Signature of Inventor \_\_\_\_\_ Signature of Inventor \_\_\_\_\_

Date \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_

20.12.1999

09/463601

THE COMMISSIONER IS AUTHORIZED  
TO CHANGE ANY FEE IN THE  
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430 Rec'd PCT/PTO 28 JAN 2000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : ATTN: BOX PCT  
Heinz GÖD : Docket No. 00287/46931 12/cj  
Serial No. NEW :  
Filed January 28, 2000 :

LEARNING SYSTEM AND METHOD OF  
LEARNING LEARNING CONTENTS AS  
WELL AS A PROGRAM LOGIC OF A  
LEARNING PROGRAM

[Corresponding to PCT/AT98/00155  
Filed June 22, 1998]

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents,  
Washington, D.C.

Sir:

Prior to examination of the above-referenced U.S. patent application please  
amend the application as follows:

IN THE CLAIMS:

Please cancel claims 1-36 and insert the following new claims:

--37. A learning system for learning learning contents, comprising means (21) which  
cause a visual presentation such as a computer game, a television film or a video game (3, 20) to  
run on a display screen,

means (25) which call up learning contents to be learnt, which in respect of content are  
independent of the content of the visual presentation, from a learning material memory (26), and

means (23) which introduce the learning contents at changing locations in the region of the  
visual presentation on the display screen (3, 20), wherein the introduction period is below the  
conscious perception threshold.

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38. A learning system as set forth in claim 37 characterized in that there are provided means (21) which interrupt the visual presentation during the introduction of a learning content.

39. A learning system as set forth in claim 37 characterized in that there are provided means (24) which control the learning system with evaluation of data inputted by way of an input device (28).

40. A learning system as set forth in claim 37 characterized in that the individual learning contents are introduced at time intervals from each other, wherein the introduction period of a learning content is substantially shorter than the time period between two successive introductions of learning contents.

41. A learning system as set forth in claim 40 characterized in that the time interval between the successive introductions of individual portions of learning contents is in the range of between 1 second and 10 seconds.

42. A learning system as set forth in claim 40 characterized in that the time interval of the learning contents is settable by the user.

43. A learning system as set forth in claim 37 characterized in that the learning content which is called up out of the learning material memory (6, 26) is played into a buffer memory from which it is introduced one or more times into the visual presentation running on the display screen (3, 20).

44. A learning system as set forth in claim 37 characterized in that the location of introduction contents follows the events of the visual presentation on the display screen (3, 20).

45. A learning system as set forth in claim 37 characterized in that the learning contents are also introduced acoustically in the form of speech.

46. A learning system as set forth in claim 37 characterized in that storage of the learning contents is effected in a plurality of learning card file compartments and that the learning contents can be stored, wherein a known learning content is advanced into a learning card file compartment with a higher degree of knowledge, and wherein the learning contents of the learning card file compartment with the highest degree of knowledge are no longer introduced into the visual presentation on the display screen (3, 20).

47. A learning system as set forth in claim 37 characterized in that the content of the learning contents stored in the learning material memory (6, 26) is variable.

48. A learning system as set forth in claim 47 characterized in that the content of the learning contents stored in the learning material memory (6, 26) is variable by the learning person himself.--

#### REMARKS

The present Preliminary Amendment presents claims 37-48 upon which U.S. examination is to be based.

Respectfully submitted,

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WO 99/06982

PCT/AT98/00155

- 5 Learning system and method of learning learning contents as well as a program logic of a learning program

10 The invention concerns a learning system for learning learning contents. The invention further concerns a method of learning learning contents and a program logic of a learning program.

A learning system in which learning contents are displayed on a display screen is known for example from US patent specification No 5 147 205.

15 The principle applies in regard to any learning that a human being normally learns easily and well something in which he is really interested. If however something does not interest a human being, then he learns it only reluctantly and generally very slowly and only in such a way that he does not really know it well and he also quickly forgets it again. Nowadays in regard to learning in a school context there are some  
20 activities such as for example spelling exercises, learning vocabulary, learning dates in history or learning formulae in chemistry, which many people do not like and which they find tedious and for which it is therefore probably difficult to arouse interest on the part of such people.

25 The object of the invention is to provide a learning system and also a method of learning and a program logic of a learning system, whereby the learning of learning contents which arouse little interest is made easier.

30 In accordance with the invention that is achieved by a learning system having the features of claim 1 and by a method having the features of claim 4 and by a program logic having the features of claim 19.

In that respect the invention is based on the realization that the brain of a human being, if he looks at something which is of interest to



him, is opened up for the receipt of items of information. If at the same time something which is not interesting to him is also brought into play, that also penetrates well into the brain which is switched into a receiving mode, and it is therefore learnt more easily.

5 Desirably the learning contents are played into or introduced into the visual presentation in small portions, wherein the individual introductions are effected at spacings from each other in respect of time and the introduction time of a learning content is substantially shorter than the time interval between two successive introductions of learning  
10 contents. For example, the introduction of the learning content can be into a computer game. For that purpose, the learning content is called up out of a learning material memory and the game program is briefly interrupted for introducing the learning content. After the interruption the game program is continued again until the next learning content is  
15 introduced. In that situation, because of the short length of the introductions of learning contents which can possibly be below the perception threshold, the interruptions in the game program are so short that playing of the game is not adversely affected. In that case, the learning content can be presented only during the interruption in the  
20 game or also while the game is continuing, if the game permits that.

Further advantages and details of the invention are described hereinafter with reference to the accompanying drawing in which:

Figure 1 is a diagrammatic view of a learning system according to the invention,

25 Figure 2 is a further diagrammatic view of a learning system according to the invention, showing a learning program which is subdivided into various modules,

Figure 3 shows a flow chart of a learning content display module,

Figure 4 shows a flow chart of the checking program module, and

Figure 5 shows a flow chart of another embodiment of a learning program with a learning program module which is interwoven with the computer game program module.

Referring to Figure 1, diagrammatically illustrated therein is a learning system according to the invention having means 21 which cause a visual presentation such as a computer game, a television film or a video game to run on a display screen 20. The visual presentation can be influenced by way of an input device 28 which besides a keyboard can also include a mouse and a joystick, and by way of means 24 for controlling the learning system. In that way it is possible for example to select which visual presentation is to run, and given presetting values in respect of the visual presentation can be inputted. If the nature of the visual presentation permits it, in that way the running of the presentation can also be interactively influenced.

The learning contents to be learnt are stored in a learning material memory 26 and are called up out of same by means 25. Those called-up learning contents are played into or introduced into the visual presentation running on the display screen 20, by means 23. Preferably, while a learning content is being played on the display screen 20, running of the visual presentation is interrupted by means 22. Various modes of displaying the learning contents in a region of the visual presentation are described hereinafter with reference to Figure 2.

The learning system can be controlled in various ways by way of the input device 28 and the means 24. It is possible to alter the intervals between the individual introductions of a learning content by the means 23 and the duration of the display of a learning content on the display screen 20. It is possible to input which learning contents are called up out of the learning material memory by the means 25, and at what frequency. The learning contents in the learning material memory 26 can be processed and further learning contents can be introduced into the learning material memory 26 from a further memory 27, for example a

hard disk drive or an interchangeable data carrier drive. The learning contents can also be called up from the learning material memory 26 in order to check the learning success.

The learning system diagrammatically illustrated in Figure 2 shows a learning program 1 which runs on a commercially available PC and communicates with various hardware components of the PC. A plurality of such hardware components which are of importance for the learning system are shown in Figure 2. They are an input device 2 in the form of a keyboard and/or mouse, a display screen 3, a permanent memory in the form of a hard disk drive 4, a further drive 5 for interchangeable media such as floppy disks or CD-ROMs. A learning material memory 6 is disposed in the main memory of the computer, while a part of that learning material memory can be taken out of store onto the hard disk drive 4 or the data carrier fitted into the further drive 5.

The learning program 1 includes computer game program module 7, a learning content display module 8, a checking module 9, an editor program module 10, an input control module 11 and a control program 12 into which the specified program modules are embedded and which provides a graphic user interface on the display screen 3 for the input of parameters and for selection of one of the various program procedures.

The computer game program module 7 causes a computer game (which can be selected from a number of computer games) to run as a visual presentation on the display screen 3. The computer game can be operated by way of the input device 2. At given intervals which can be set by way of the graphic user interface of the control program, the learning content display module 8 or the control program 12 interrupts the running of the computer game by the computer game program module 7 and the learning content display module 8 introduces a learning content which is loaded from the learning material memory 6, into the visual presentation which is shown on the display screen (and which is momentarily stopped). The learning content introduction period can be selected by way of the



learning content itself can be displayed in the area continuously (steadily) or in a blinking or flashing mode, in which respect "blinking" means repeated brief display and "flashing" means single very brief display. The flashing time of the learning content can be so short that it is beneath the perception threshold. The learning content can also be introduced in pixel-wise or letter-wise manner. The appearance of the introduced learning contents can be graphically configured by the user with the editor program module 10.

For the purposes of learning a foreign language, the learning contents are one or more words of that foreign language and they are introduced in the form of labelling on or inscriptions applied to objects present in the computer game. In order to achieve interactivity, those learning contents can also be displayed when the respective objects are clicked with the mouse pointer. In the case of learning systems of that kind, in the simplest embodiment, there is no need either for a specific learning material memory or an interruption in the game, because labelling and also display when clicking on objects can be parts of the game. If the necessary hardware is present, the learning contents can also be introduced acoustically in the form of speech.

Figure 3 shows a flow chart of an embodiment of a learning content display module, more specifically in a variant when the computer system used and the computer language employed do not permit time sharing. After the beginning of the program the system time is loaded. In the first running of the program after the beginning of a new learning session, the learning content counter is set to zero and the program branches to the command "increment learning content counter by 1". Subsequently the next learning content is loaded from the learning material memory 6 into a preparation memory or buffer (not shown in Figure 2) which is also implemented in the main memory of the computer. The repetition number associated with that learning content is ascertained from the learning card file described hereinafter and the repetition counter is set to

1. In the first running of the program the spot counter which specifies how many spots were previously displayed on the display screen is also set to zero and the program therefore branches to the command "increment spot counter by 1". The learning content in the buffer is now displayed on the display screen. The present system time is stored in the variable "time of the last spot". If the repetition counter is less than the repetition number associated with the learning content, the repetition counter is incremented by 1 and the program is left, otherwise the learning content counter is incremented by 1 and the next learning content is fetched from the learning material memory into the buffer, in which case the associated repetition number is ascertained from the learning card file. In this case moreover the repetition counter is set to 1 and as the spot counter is now greater than zero the program is left. On the next running of the program the system time is again loaded. As the learning content counter is now greater than zero, the variable "time since the last spot" is ascertained, which is determined from the system time less the time of the last spot. If the time since the last spot is less than the spot spacing which is inputted by way of the graphic user interface of the control program, the program is left, otherwise the spot counter is incremented by 1, the learning content is played onto the display screen from the buffer and the variable "time of the last spot" is set to the system time. Depending on whether the repetition counter is less than the repetition number associated with the present learning content, the repetition counter is incremented by 1 and the program is left or the learning content counter is incremented by 1 and the next learning content is fetched from the learning material memory into the buffer, in which case the associated repetition number is ascertained, the repetition counter is set to 1 and the program is left.

The commands relating to time control do not apply in regard to  
30 time-sharing versions.

By way of the checking program module 9 it is possible to check whether the learning person has correctly received the learning contents. For that purpose the learning contents stored in the learning material memory 6 are desirably characterised as being stored in various learning card file compartments or boxes. If the learning content which is called up by the checking program module is known, the learning content is further put into a learning card file compartment or box with a higher degree of knowledge, in which case the learning contents of the learning card file box with the highest degree of knowledge are no longer put onto the display screen by the learning content display module. In addition a given repetition number can be linked to each learning card file box. This is the number as to how often a given learning content is displayed on the display screen in succession (or at what average frequency).

Figure 4 shows a flow chart of the checking program module. After the start of the program the form of presentation of the learning content and the form of the answer can be selected. In addition the number of fresh attempts in the case of a wrong answer can be inputted. Finally the learning card file compartment or box of the learning card file, which is to be checked, is also selected. If the program is not broken off or terminated, a learning content is fetched from the learning material memory and presented in the selected form on the display screen. The repetition counter is set to 1. After input of the answer, the answer is monitored by the program. If the answer is wrong, further progress of the program depends on whether the repetition counter corresponds to the repetition number. If that is not the case, the repetition counter is incremented by 1 and the answer can be inputted once again. If on the other hand the repetition counter is equal to the repetition number, the correct answer is displayed and, if the learning content is not already in the first compartment or box, the learning content is moved further forwardly in the learning card file by one or more compartments or boxes - the associated algorithm can be established by the user - and, if the

program is not terminated, the next learning content is fetched from the learning material memory. If the answer was correct, the further procedure with the program depends on whether the learning content was already in the last active compartment or box. If that was the case, the  
5 learning content is stored in the latent memory which corresponds to the box with the highest degree of knowledge and from which no further introduction of the learning content into the computer game is implemented. Otherwise the learning content is arranged in the learning card file rearwardly by one box, that is to say it is put into the box with  
10 the next higher degree of knowledge.

By way of the editor program module 10, it is possible for new learning contents to be inputted into the learning material memory or introduced from the data carrier in the hard disk drive 4 or the interchangeable data carrier drive 5 or for learning contents already  
15 present in the learning material memory to be processed. It also enables graphic configuring of the learning contents. The inputs can be checked for correctness by way of the input checking module 11.

Figure 5 shows a part of the flow chart of a further embodiment of the learning program. In this case, as set forth hereinafter, a learning  
20 content display module is interwoven with a computer game program. After a starting dialog in which for example the area of knowledge to be learnt and the computer game to be used is interrogated, the procedure involves querying whether the learning contents in the learning material memory are to be processed and, if that is the case, the procedure  
25 returns to the starting dialog after processing of the learning material memory (by means of an editor program module). The procedure subsequently queries whether a knowledge checking operation is to be implemented. In that case, after implementation of the knowledge checking operation (with a checking program module), the procedure  
30 reverts to the starting dialog. Finally the procedure queries whether the



game is to be begun and, in a negative case, it reverts to the starting dialog while in the positive case the game is initialized.

Subsequently the program of the computer game runs, in which case the command "go to the subroutine learning content display(= spot)"  
5 is distributed by way of the commands of the game program in such a way that this subroutine is called up at a spacing of approximately one second in each case. Another option would provide that the subroutine learning content display is called up by a time sharing command if the programming language of the computer game has such a command  
10 available.

Instead of a computer game, it would also be possible to play on the display screen other visual presentations such as for example a television film or a video game. Introduction of the learning contents as well as checking and editing of the learning contents can be effected in  
15 that case in a similar manner by way of suitable hardware. An apparatus for introducing a subliminal message into a normal television picture is known for example from WO 94/26063.

## CLAIMS

1. A learning system for learning learning contents, comprising  
means (21) which cause a visual presentation such as a computer game, a television film or a video game (3, 20) to run on a display screen,  
means (25) which call up learning contents to be learnt from a learning material memory (26), and  
means (23) which introduce the learning contents into a region of the visual presentation on the display screen (3, 20).
2. A learning system as set forth in claim 1 characterised in that there are provided means (21) which interrupt the visual presentation during the introduction of a learning content.
3. A learning system as set forth in one of claims 1 and 2 characterised in that there are provided means (24) which control the learning system with evaluation of data inputted by way of an input device (28).
4. A method of learning learning contents in which learning contents are displayed on a display screen, characterised in that the learning contents are introduced into a visual presentation running on a display screen (3, 20), such as a computer game, a television film or a video game.
5. A method as set forth in claim 4 characterised in that the learning program calls up learning contents from a learning material memory.
6. A method as set forth in claim 4 or claim 5 characterised in that the individual learning contents are introduced at time intervals from

each other, wherein the introduction period of a learning content is substantially shorter than the time period between two successive introductions of learning contents.

7. A method as set forth in one of claims 4 through 6 characterised in that the introduction period is shorter than 1 second, preferably shorter than 0.2 second, and preferably shorter than the perception threshold.

8. A method as set forth in one of claims 4 through 7 characterised in that the time interval between the successive introductions of individual portions of learning contents is in the range of between 1 second and 10 seconds.

9. A method as set forth in one of claims 6 through 8 characterised in that the time interval and the introduction period of the learning contents are settable by the user.

10. A method as set forth in one of claims 4 through 9 characterised in that the introduction or display of a learning content is effected when the visual presentation is stopped.

11. A method as set forth in one of claims 4 through 10 characterised in that the learning content which is called up out of the learning material memory (6, 26) is played into a buffer memory from which it is introduced one or more times into the visual presentation running on the display screen (3, 20).

12. A method as set forth in one of claims 4 through 11 characterised in that the introduction of the learning content is effected into a stationary area or a moving area which follows an event of the

visual presentation running on the display screen (3, 20), wherein the area can be visible or invisible.

13. A method as set forth in claim 12 characterised in that the learning content is displayed in the area continuously or blinking or flashing, and/or is displayed flowing into the area in pixel-wise or letter-wise mode.

14. A method as set forth in claim 13 characterised in that the nature of the display can be selected and set in respect of time by the user.

15. A method as set forth in one of claims 4 through 14 characterised in that for learning a foreign language the learning contents which represent one or more words of the foreign language are introduced in the form of labelling or inscriptions on actions or objects present in the visual presentation, and preferably the learning contents are also introduced acoustically in the form of speech.

16. A method as set forth in one of claims 1 through 15 characterised in that storage of the learning contents is effected in a plurality of learning card file compartments and that the learning contents can be stored, wherein a known learning content is advanced into a learning card file compartment with a higher degree of knowledge, and wherein the learning contents of the learning card file compartment with the highest degree of knowledge are no longer introduced into the visual presentation on the display screen (3, 20).

17. A method as set forth in one of claims 1 through 16 characterised in that the learning contents stored in the learning material

memory (6, 26) are variable in respect of content and/or graphic configuration.

18. A method as set forth in one of claims 1 through 17 characterised in that when clicking on an object represented by the visual presentation, a learning content associated with said object or said action is introduced into the visual presentation.

19. A program logic of a learning program which displays learning contents on a display screen, characterised in that the learning contents are introduced into a visual presentation running on the display screen (3, 20) such as a computer game, a television film or a video game.

20. A program logic as set forth in claim 19 characterised in that the learning program calls up learning contents from a learning material memory.

21. A program logic as set forth in claim 19 or claim 20 characterised in that the individual learning contents are introduced at time intervals from each other, wherein the introduction period of a learning content is substantially shorter than the time period between two successive introductions of learning contents.

22. A program logic as set forth in one of claims 19 through 21 characterised in that the introduction period is shorter than 1 second, preferably shorter than 0.2 second, and preferably shorter than the perception threshold.

23. A program logic as set forth in one of claims 19 through 22 characterised in that the time interval between the successive

introductions of individual portions of learning contents is in the range of between 1 second and 10 seconds.

24. A program logic as set forth in one of claims 21 through 23 characterised in that the time interval and the introduction period of the learning contents are settable by the user.

25. A program logic as set forth in one of claims 19 through 24 characterised in that the introduction or display of a learning content is effected when the visual presentation is stopped.

26. A program logic as set forth in one of claims 19 through 25 characterised in that the learning content which is called up out of the learning material memory (6, 26) is played into a buffer memory from which it is introduced one or more times into the visual presentation running on the display screen (3, 20).

27. A program logic as set forth in one of claims 19 through 26 characterised in that the introduction of the learning content is effected into a stationary area or a moving area which follows an event of the visual presentation running on the display screen (3, 20).

28. A program logic as set forth in claim 27 characterised in that the learning content is displayed in the area continuously or blinking or flashing, or is introduced in pixel-wise or letter-wise mode.

29. A program logic as set forth in claim 28 characterised in that the nature of the display can be selected and set in respect of time by the user.



35. A program logic as set forth in one of claims 19 through 34 characterised in that the learning contents stored in the learning material memory (6, 26) are processable with an editor program module (10) in respect of content and/or graphic configuration.

36. A program logic as set forth in one of claims 19 through 35 characterised in that when clicking on an object represented by the visual presentation a learning content associated with said object or said action is introduced into the visual presentation and preferably the learning content is also introduced acoustically in the form of speech.

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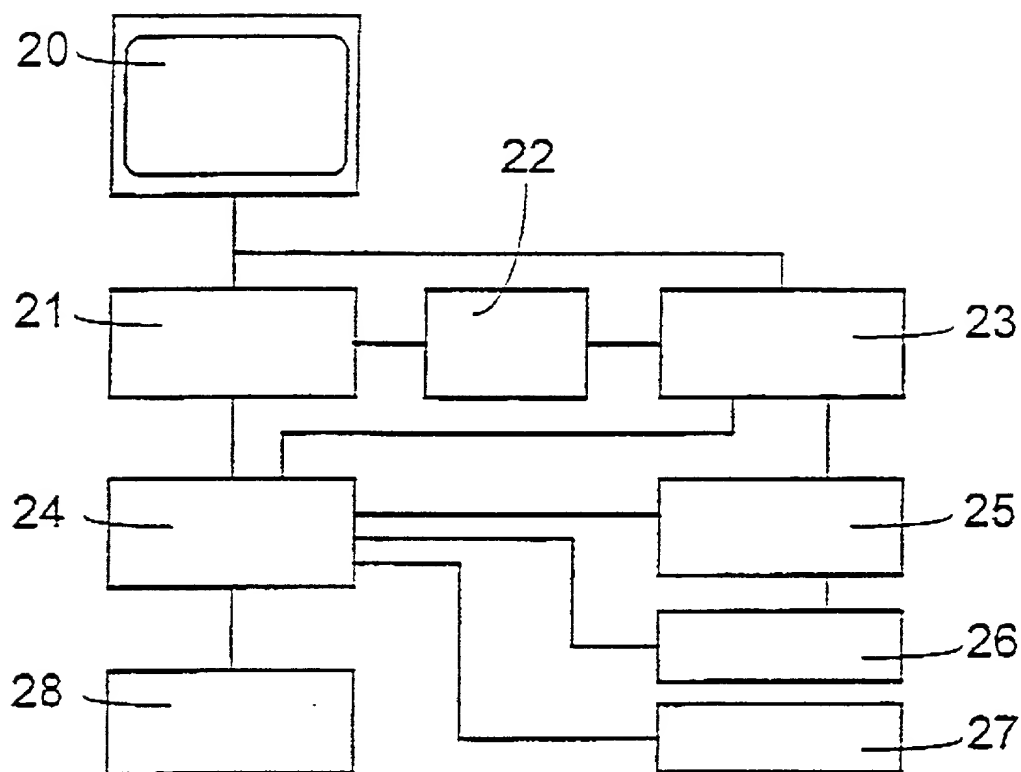


Fig. 1

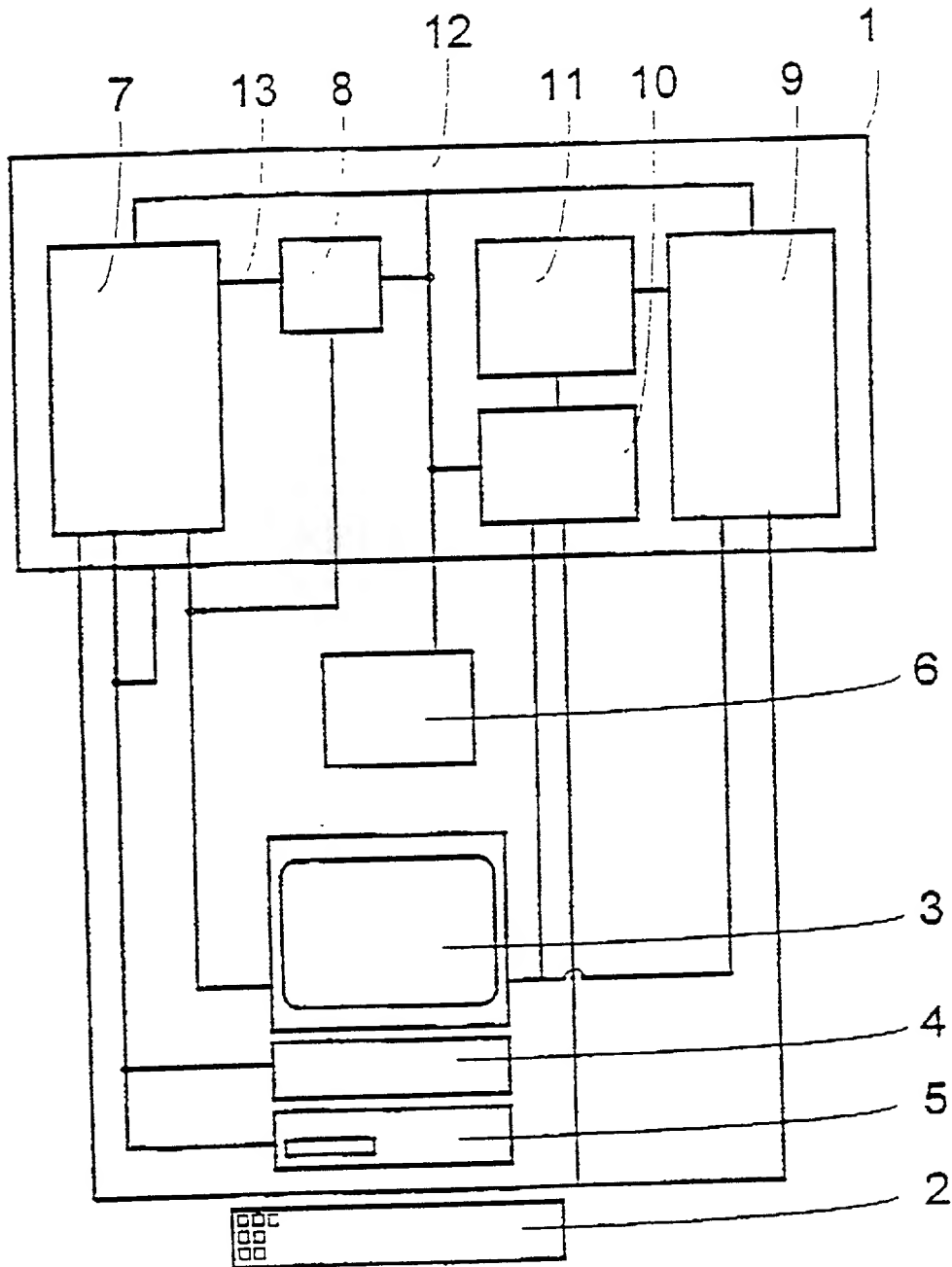


Fig. 2

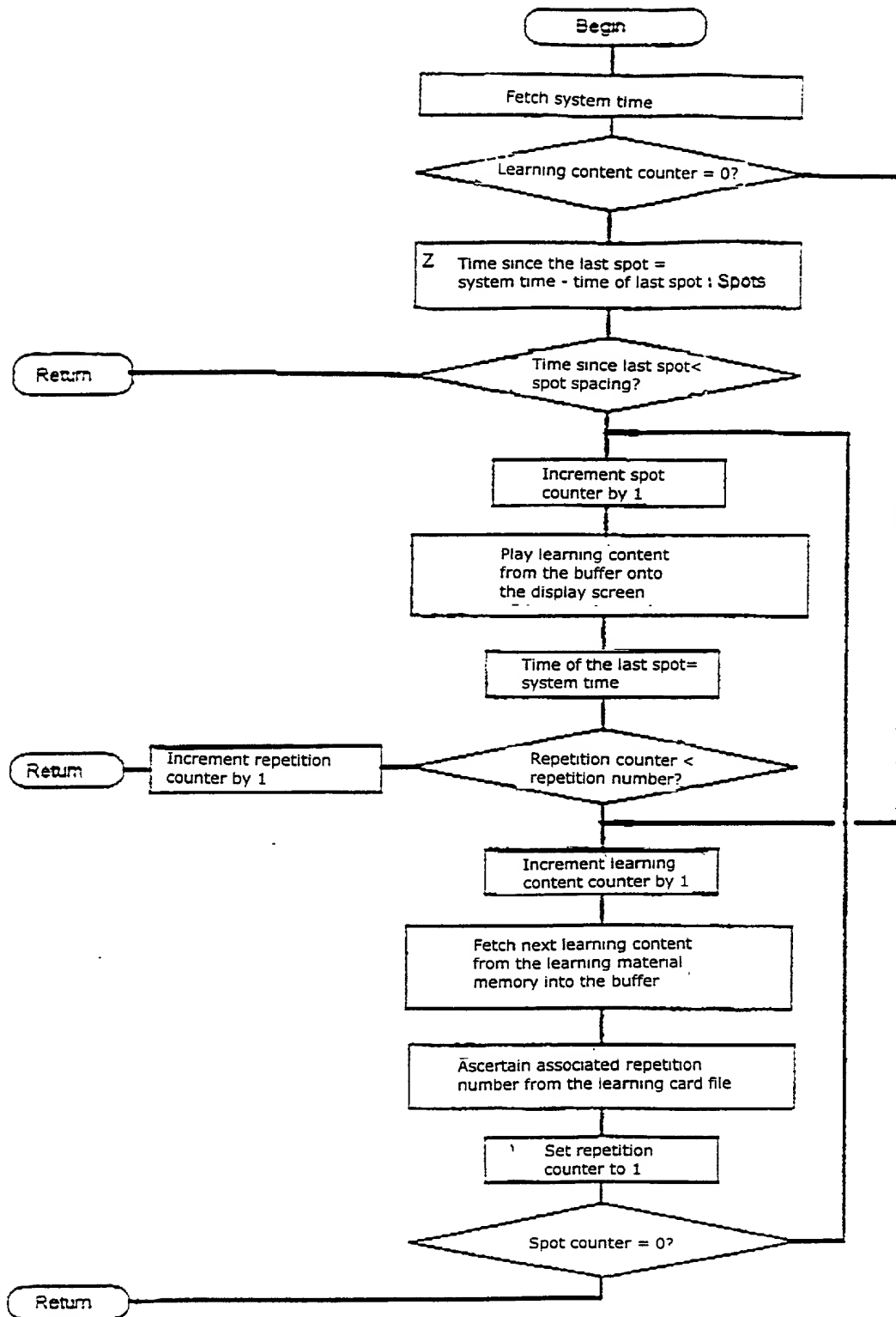


Fig. 3

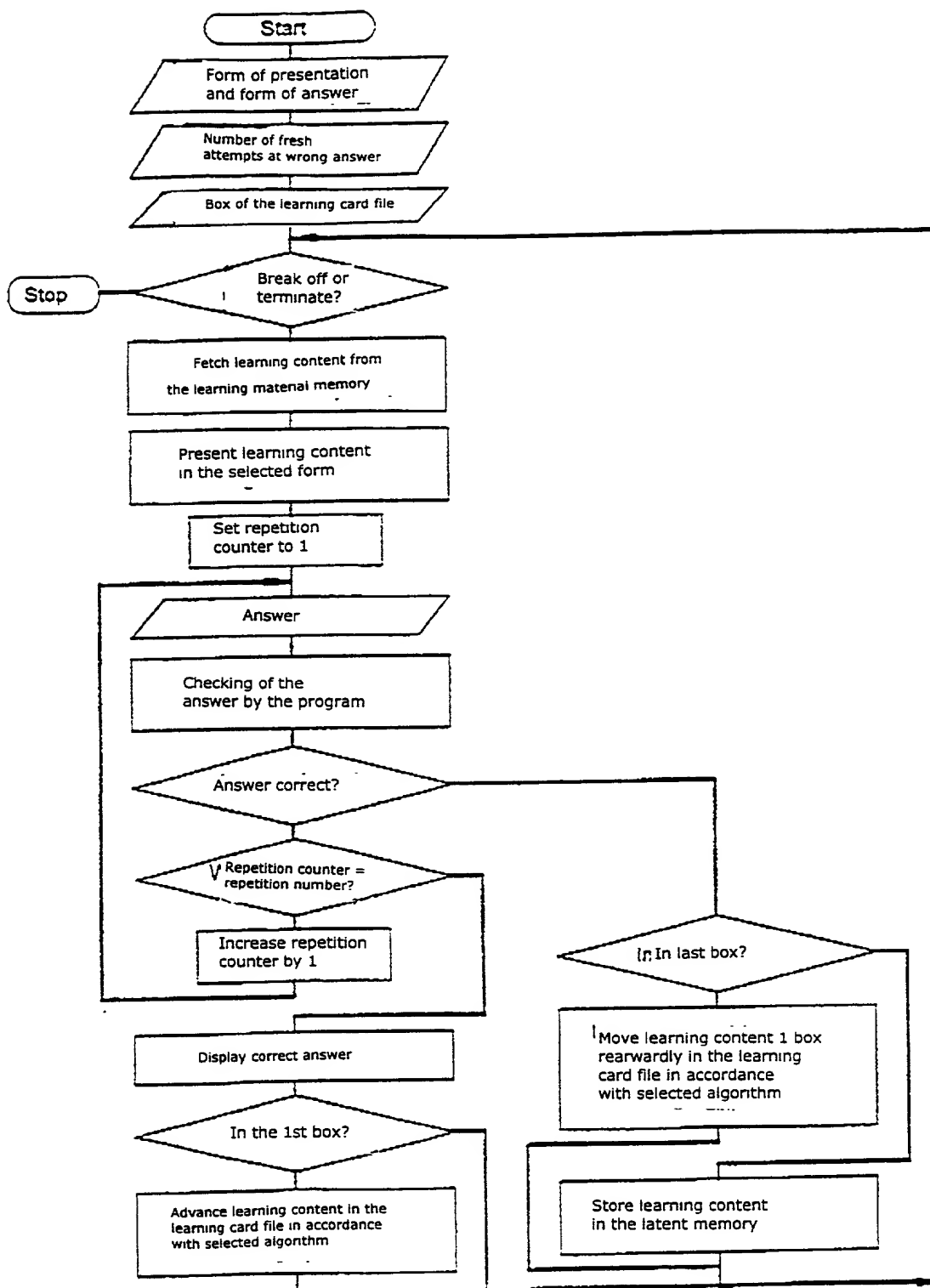


Fig.4

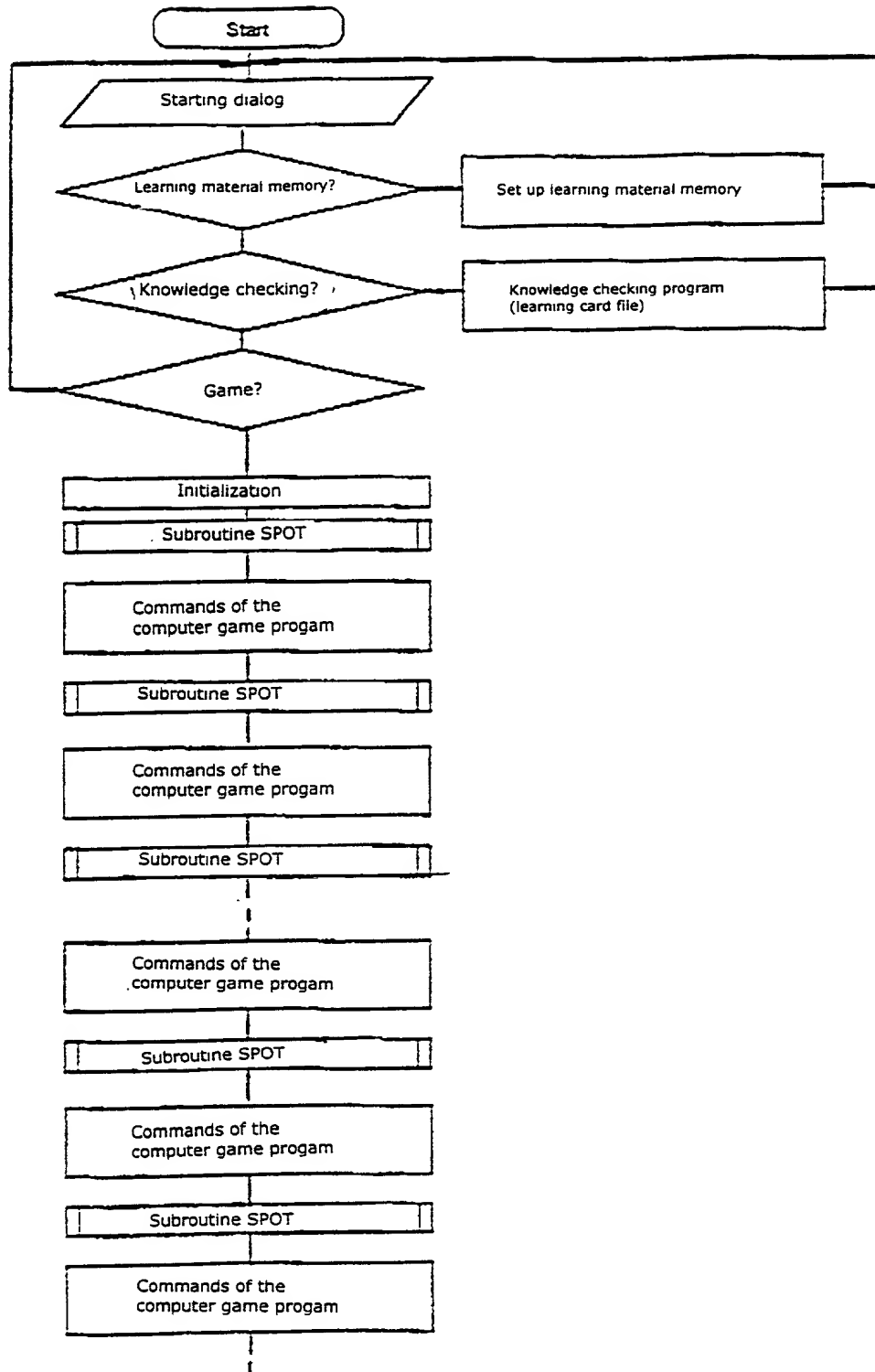


Fig. 5

## DECLARATION AND POWER OF ATTORNEY FOR U.S. PATENT APPLICATION

( ) Original ( ) Supplemental ( ) Substitute (X) PCT ( ) Design

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that I verily believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Title: Learning system and method of learning learning contents as well as a program logic of a  
Learning program ✓

of which is described and claimed in:

- ( ) the attached specification, or  
 ( ) the specification in the application Serial No. \_\_\_\_\_ filed \_\_\_\_\_;  
 and with amendments through \_\_\_\_\_ (if applicable), or  
 (X) the specification in International Application No. PCT/ AT98/00155 ✓, filed 22 June 1998 ✓, and as amended  
 on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the content of the above-identified specification, including the claims, as amended by any amendment(s) referred to above.

I acknowledge my duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim priority benefits under Title 35, United States Code, §119 (and §172 if this application is for a Design) of any application(s) for patent or inventor's certificate listed below and have also identified below any application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

COUNTRY	APPLICATION NO.	DATE OF FILING	PRIORITY CLAIMED
Austria	A 1299/97 ✓	31 July 1997 ✓	YES
Austria	GM 251/98 ✓	17 April 1998 ✓	YES

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

APPLICATION SERIAL NO.	U.S. FILING DATE	STATUS: PATENTED, PENDING, ABANDONED

003210 "T09E9450

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I further declare that all statements made herein of my own knowledge are true, and that all statements on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

1st Inventor *John H. Hines* Date 20.12.1999  
 2nd Inventor \_\_\_\_\_ Date \_\_\_\_\_  
 3rd Inventor \_\_\_\_\_ Date \_\_\_\_\_  
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 5th Inventor \_\_\_\_\_ Date \_\_\_\_\_  
 6th Inventor \_\_\_\_\_ Date \_\_\_\_\_  
 7th Inventor \_\_\_\_\_ Date \_\_\_\_\_

The above application may be more particularly identified as follows:

U.S. Application Serial No. \_\_\_\_\_ Filing Date \_\_\_\_\_  
 Applicant Reference Number \_\_\_\_\_ Atty Docket No. \_\_\_\_\_  
 Title of Invention \_\_\_\_\_  
 \_\_\_\_\_

6 -

And I hereby appoint Michael R. Davis, Reg. No. 25,134; Matthew M. Jacob, Reg. No. 25,154; Jeffrey Nolton, Reg. No. 25,408; Warren M. Cheek, Jr., Reg. No. 33,367; Nils E. Pedersen, Reg. No. 33,145 and Charles R. Watts, Reg. No. 33,142, who together constitute the firm of WENDEROTH, LIND & PONACK, L.L.P., attorneys to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith.

I hereby authorize the U.S. attorneys named herein to accept and follow instructions from Patent Attorneys Torggler-Hofinger, A-6020 Innsbruck/Austria as to any action to be taken in the U.S. Patent and Trademark Office regarding this application without direct communication between the U.S. attorneys and myself. In the event of a change in the persons from whom instructions may be taken, the U.S. attorneys named herein will be so notified by me.

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003470 "T.O.E.S.H.6"

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